Introductory Lectoine fu- 1815 Lames Runh M.D. Lecture for 1815

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RIDGWAY BRANCH.

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COMMUNITER BONA PROFUNDERE DEORUM EST.

I have come before you to deliver in introduction to the hetures of the Late De Benjamin Ruch on the Institute and Prode of Medicine, In thus addressing you I do not feel as if I were puforning a voluntary tack It is a duty. By the favor of the author of these actured I have been made the popular of them, and I should be unworthy of the brust, if I were not by an ende avour the extend the truthy Hey contain, to sime of some slender meta: tion of the exection of him who used so much industry to originate and teach theme. - The pre sont time has been called with a sentiment of reproach the age of acturery, In thus alving to the number, I ful disposed to question the advantages that are said to result from Their made of instruction and to ark if greater hanifits might not be derived from the more delikerate opportunity which books

when a body floats in water it offeets a particular pasition, and this position is such, that the line which goins the centre of granity of the hody and the centre of gravity of the immersed part is always hertical -124 Milkinson a thin Man was taken Jue fiet trus inches

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afford for receiving knowleage and reflecting upon it than can take place in the hasty tran setions of oral discourse - The husiness of pub: lie between is like the other pactices of the world note which almost have crift by the interest of men and the oversight of time. Their advantage was real and indispensible to the student at their oustitution They had their origin with teachers who had tinawhage to commismitate and who had not the mulliplied means of The fress to extend that knowledge to other times and places. Fronting has changed the made of many acts and books have now be come the common and sufficeents instructory of the world. To this remark there are some exceptions. The element, of all knowledge must be addreps of to the senses, and in me dical shidy there are some branches so absolutely elementary that an attempt to teach them in any other way than by

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exhibiting their objects to the senses would be all in wain. Such brancher are anatomy The experiments of chemistry, The operations of Lungery and Materia Medica where it is properly or usefully taught by shewing and not merely describing the sensible grek: lilies of medicines .- . There subjects with he more easily understood and more in = presidely marked by the demonstrations of a lecturer. Am other occasion on which he tures may be useful is when they contain knowledge or peculiar opinions which can: not be obtained from any other source. I need searcely say with what polea of claim your attention. The between you will hear contain not only the seccord of as much experience as has fallen to the lot of any tracker, but they contain oreginal deductions from this experience and an

Carlo Maria and All Carlo 0 the state of the s and the same of th le and the state of the state of the state of the state of 22 and the second of the second o de l'actions de l'action de l'action de l'action de l'action de la laction de laction de laction de laction de la laction de laction de laction de la laction de laction de laction de la laction de la laction de laction - Late I was a self water to be a self with the self water to be a self water to be a self water to be a self with the self water to be a self with the self water to be a self with the self water to be a self with the self water to be a self water to Later Marie Many Many Description lu

application of principles thus ordered to the purposes of medical procetice. That you May In an the obinions containd in there lectures are original and unful, I have only to state that the trial and concertion of their touth throward a whale country has overcome as powerful an apposition as was ever rained against any movation and that with the danble operation which meany truths have of offending and conven: eing, they have by the same persons hem both condemned and practiced. I have said the abject of the acture of will read to you is to theach the Institutes and practice of Medicine - The systematic division that has been make of there two great branches of medical study is as follow The Institutes have been separated into Thisiology which treats of all the actions

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of the hady in a healthy state: Hygeine which lays down the rules for preserving these healthy actions; Pathalagy which discribes the actions of the hady in a diseased state, and There peuties which points aut in a general way The qualities of medicines for the cure of this diseased state. The Practice of medicinex en tors into the detail of all the general sules laid dawn in Pathology and Therapeuties The separation of Institutes and Practice of medicine, is no more then than that division which every seione admits inte a sprese: on the first part of the Smithites, among other actions of a healthy hady, treats of the form and uses of the Musclis and paints out the made of their operation in the exercises of walking sunning leaping and Swimming and I have chasen for this introductory

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beture the enter into the detail of the Phrsiols great action of the exercise of I wimming Man is almost the only animal that cannot swim naturally, and he is almost the only animal which by his act, can over. come thase ne expeties to which his structure Seams to limit dim. It be comes then a Subject of philosophical enquirey why man cannot sewim naturally and by what ma nagement of his hody he can remedy this ha tural meapacity. The whole art of swomming depends upon the bady being of life specific gravity than water, and upon the proper po-Setion and muscular exertion of that body. and first of the Bay oney necessary for swimming-The human body is ne general so much lighter than an equal bulk of water that it will remain suspended at the surface when immen

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Sed in it - This afference of gravity will ! appear efected to the art of Swemming, If we consider that when animals mave in fluids dighter than their badies, there is a two fold exertion necessary lone to give them a pro: : grepine motion this it, the other to prevent their sinking. Birds move Amo' the air which is much lighter than their bodies, by means of this two fold action of suspension and smognession, and the great mass of flish on the beaut of there animals Shaws the strong muscular power applied to the wings for the laborious exercise of flying. But man has proportionally to hiray very tette stength, enaugh indeed to mave him slowly This the water when he is supported by its greater weight, but far short of that vart pawer whe weareld be necessary for his support and progress if the water were much lighter than his

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hady. If the museular pawer of man were much enereased beyond its present limit then the might of the bady might be greater than water, for this additional strongth would sup. port the hours in the lighter fluid, and Severnming wanted then he efected upon the principles of the art of Flying . - In or arm that man may swern then his hody should be somewhat hyther Than an equal bulk of water, that it may the supported at the surface, and the experi ence of divers proves that it is so. They cannot dive the great depths executate they without en: creasing their weight by some heavy body, or by giving themselves a powerful impitus by a fall from a hight, or by strong exertion in swimming dawnwards, nor ear they remain beneath except they dings grants stoms on mots or something permanent to retain Them. - But this subject of the Specific gravity

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of human bacis has been exhibited with 9 more pricise detail by M. Robertson in the fiftieth volume of the Phil: Fransactions. He emplayed a Cistern six feet and a half in length, thirty makes wide and thirty makes dup. He nated the weight of the man; the hight of the water in the cistern he fore immersion; the hight the water rose to after immersion, He than calculated the weight of The water which they rose upon the immersion and the hulk of this being exactly a qual to the bulk of the body, its weight when compared with the weight of the body gave the relative gravitits of the body and water. - From a to hular wien which he has given of all there pan tienland in the cases of ten men whom he sub: = jeded to his experiment, it appears that one - was one pound heavier than an equal hulk of displaced water, and consequently sunk Two were of equal gravity with their respec true hulks of displaced water and therefore

to the test that he was a second to the test to the te was it, to the same first and a fact the same that the same water and the state of the stat A with the state of the state o man in the state of the second The Maria Land Contract of the nest The state of the s po an the halk of this have season is so all the af 1 North has a shirt the grant of the shirt of the shirt of for such the first first plans which we are Line in the the heavy dead the after a green with which will be a senson to be desired to be a senson ter. with the mark the same and the hea

would remain immersed at any point in 10 it, one was faurteen pounds lighter, and would sine one was, aglien pours lighter one was trenty facer. one - twenty fine Two - Thirty and one - Therty two pouros lighter than their suspective bulks of displaced water. - It appears from these experiment, that the specific gravites of men hear no regular proportion to their hights. for of true of the subjects each of whom was five feet facer inches in hight, one was twenty and the other thirty pounds lighter than the wa ten - It appears also that their specific gravitus bear no regular proportion to their hulk, for of two of the subjects, each of whom displaced the same quantity of water consequently having the same bulk, one was of the same weight as the displaced water and the other twenty faun pounds lighten . - his the specific gravity

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of a man then avainot depend whom the 11 highet or bulk of his bohale hody, the cause of The variation must be lotted for me the relative size of the different parts of it for there parts have different specific gravities. The head is the greatest and much sufocion to water, the gravity of the limby is life Than the head but greater than wa ten, the body is about the some as western, and The chest is the lightest part, how the chest is so much lighter than water as to countertal ance the greater gravity of the head and limbs, so that the whole body when immersed is lighter At me the mater. - There is a common notion that fat men are lighter in the water than thank of a spane or slinder form. analogy would lead us to believe it, tha'S have met with no accurate abservations or experiments that make it certain. This view of the relative grandy of the parts of the body may on: able us to judge of the boy mey of a man

The second secon by to seems at the state of the seems of Little Late of the Control of the Co wei Rec Ana , of my little the state of the ezas a standard had had hear the class is in i4 1 well of gettle them weether as it committees enough her is four alea go a neity of the head of and linked to 29 9 The state of the s of a whe lel

by his form. If the limbs and head be small 12. well flaat earsely near the Surface of the water. Reallesting that I am stite considering merely the bay and of the leady from its greater livity Than water without any sid from muscular exertion, It is proper to consider in what monren its lively and the difference in the weight of it, so beral parts will cause it to flaat . - The centre If granity of the human hody is in the middle of a line arown a crops the hips, and this centre which represents the weight of the whole mays is below the cheet or lightest part, therfore when the body is immerced in the water the chest will be main above and the hips will deseared title the seast, sinking, hereath the surface according to its specific granity. Thus recurring to the fre =

red was of w the time the second of the sec were 0 1 me the state of the same of th te and the state of t vate aut when the second of the plant of the the said of the formand he say as the hard nas re i the second the same that the same that was also the ! house the surprise the state of the description of lon what the exist or it getted to act therein to he

ceaing experiments, the man whose weight. was one paund more than an equal bulk of water would sink to the bottom, Those who were lighten would semain at the surface with as much of the body above it as is equal to The difference of the weight of the body and the water, and this part will always be the upper partion the head. If we suppose the head of a man to unigh twenty fine pounds, then that one who was twenty fine pours tighten than the wester cauld flaat with the Whole head above the surface. But such a builty is nanely the met, and the body generally sinks till the mater river to about the highet of the eyes or above them . -I have thus fan considered the first epential quality for swimming the lively of the hody. but this alone would not enable a man to

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continue in the water. - Since the position 4 he want a apune want a be as me have just seen with his month and have below the sur face and this would prevent respiration on which his life depends. In or our then that he might line in the weater by means of his levely it wanted be necessary that he should so far meline his head backwards that the portion the surface might be The have and mouth, But the face being in this care horizontal and the head thrown back to he arely a night angle with the hary, the posture would be too constrained and painful to be home for any lingth of time, but supposing this pasture were no inconvenience, yet from the slight difference in the granity of the hory and weather and from the small chartier the Jack moula have above the surface, the slightest

The state of the s impu when the man will at he will be the house of a second 7 /k and the second of the second o I M we was he will be with the wind of the way of the and for the in A this ! for a THE RESERVE THE REAL PROPERTY OF THE PARTY O This we have the second to the seco mo Carried and John Manual the wanted he has some of head for the Sucus

impulse such as the movement of a limb 15 or the mere stroke of a wave would be sufferents to plunge the hady so frequently and so far below The surface as to desturb the breathing very much and finally to aistray it - another cause then Sor the support of man in order that he may live in the water, must be saught beseauch his wity and this cause will be found in the second epintial Sor Sheimming a proper Muscular exertion. this sincebods so formations since orb in And rolation too the section of the Amuschy. This he ard includes the consideration of the proper posetion for Summing since this position is Man. tained only by musual ar exertion. The paretion which after greatest resertance to the ascent of the hody in water is the horezantal one, and Mat of last never: tare the upright, for in these opposette care there is the largest and smallest papule Sur

bulger siech an the production of all the the mene sombe of a mount would be sufficiently please the hardy so prequently and so fast dubor in her see to an it dealers the break present in some to seption to a such the course than no onl in the back but us suppose. true The hearter must be saw golder best his levely the dense and le passon or in the record extended long this in the sun of for front the section section securities of PERSON AND LOS BARRESCON PROPERTOR PERSON PROPERTOR DE LA PORTE DEL PORTE DE LA PORTE DE LA PORTE DEL PORTE DE LA PORTE DEL PORTE DELA PORTE DE LA POR ink or you are all the experience of the war we are lore the 4 /

face directly opposed to the water in it, 10 pasage Ano it - But we have sun that the knoy when immersed falls to the upright pose how, the least advantagewar for support In order therefore to bring it to the proper hore Soular porture The water below must be Struck by the feet, this elevaly the linely to The surface and set, the whole hoty to the porgonlal line. But the strake of the fut me This situation would not prevent the linky Sonking again to the upright desection, The horizontal line. Then must be preverued by other means. There are a strong contraction of the musely of the back and hips by which there parts are kept in a rigid line with the chest. Thaw the chest being The hayant part of the harry and flanting at the surface, The inforion parts are made by this regedity to project as it were from

the lon lad 41 nege zne na ha meis end as lase the state of the first and me The Durance Dane Sales and Lander rue again to the who old depending the ?aus 1a. f te.

the Chest as a fixed point, and thus the 1%. horizontal partiese is mastrined at the sun Jace - I wish what I have here remarked of the Back and Hips being kept in a regid line with the Chest to be remembered since I shall more than once recur to it and I hope to show that upon this more than upon any other point the art of Swimming depends in In treating of the hog: any of the haty I suid a man could not true in the upright position in mater, he: cause Le could keep the head thrown huck Sa far that the part which remaind above The surface might be the hose and month But in the horganital line to which he is have supposed to be, this difficulty no longer Esists, and the smallest reflection of the head will enable him to breath with perfect frudom. Since then the hoty to

este riceast act hastlene is muchand st the las has see - of wind with a later have have hat Make the thought and the leaving legitle in a oud hier auth the chiet to he somemiles of 1 an as I shall more than ones, never the st Land a the the whom the the wind 1- Ah in when me and with the and of this en men of the format of the format of the form ne the of the had the the total ma es in the experience handened the the 24/1 wine the country that the desire the said Sp with the the part will demineral to the The state of the s we see paper of to he this diffe could no love on The same state of the same of West of the second of the state of the

extended on the back along the surface 18 has most buyancy because nearly all the budy is immersed and as the small portion istuate remainifichance is the face which al land resperation, It sale aws that the best position for swemming would be for a mon to Amow himself on the back, brighte body stright at the surface and by shitting with The limbs to mane this the water. - But this made of swemming on the back the the easist to be barna if the art were taken up Synthetically, get from the slowness of the mation in this porture, and the violence dose offers to the habity of man, by his thus mouning in the appointe ainection to which he looks and his lying on the back, it is generally The last acquired or practiced. - Swim ming is always learna by turning for

MARKET STATE OF THE STATE OF THE SALE SALES STATE OF THE SALES STATE OF THE SALES SA this S Las part hopeney he come the select the wh will told with me the sound of the the case was a file for the fire all for the section of th there of a ship was the said with the said works The see the see we a fighter than I have the ace of summer many and the state that the Fran word to be have at the same of the same int leteally get from the downey of the Laa adent for the photostal the sente

this supine to the prone pasition, or with the breast upon the water. Now this prone position immediately dimenutes the Boy anay of the body, for and the when supine. was of the same gravity with the water, from a small part only being allowe the surface, and as respiration would continue from that part bung the mouth and hose, when the hady is turned to the prose position, it becomes heavier Than water, from the impositifity of beathing in this situation without kuping the whole head above the surface. hence arrives the necepty of museular eastion in swemming on the face, to support the budy, rendered here vier by this elevation of the head, The pheromena of swimming in this prose position are First the man throws him seef on the surface of the water, he reflicts

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the head from its right line with the 20 body to rearly a right angle, The ligs being he avier than water would sink if Ledio not contract the muscly of the buck, there by having one of their attachment, to the Chest or lightest part and the other to the hips, the latter are elivation and held at the surface, and ever: sequently the ligs are kept from sinking to Their natural setuction in the boosers water. He hands are now slowly stretche aut. at The same time the juints of the lower limby are slately heart, Then the hands are force ely braught round with the palm approved to the water and at the same moment The ligs are violently extended, The water yellos to these impulses, but it cannot yield as fast as they can be moved, and this afference of velocity in the limby and the

eldi 1 = ht wille 'said the , dy Lover will rent f ac te fle

guelding of the water, becomes a solid 21 surface for the linky to press against, and The hoay manes forward with a helocity derived from this solid resistance I said that in swimming on the face, with the head and nick out of water, the hady has no hay oney consequently the he overeut to dike flying, in which the hody besides being sufferted moved forwards ment be supported, and maced the made of action in swemming exactly resembles The flight of those which more this The air by a sucception of curved. as the wort pecker and common yelrow bird of the country. For the body lying some what obliquely at the surface, the lys being a blee lower than the chest, when

te m is four ut he Market Market William Committee Day and Land to the . urfa and is take Designation of the sale blung , qui te su the gift of these dottes Atten

the water is struck by the feet, the chest 22 is pushed forward and and out of the water but being in that raised position, much heavier than before, it is branght leack to the water after making a curee on the Surface, which curve is forming whilst the Lands and legs are preparing for a new stroke, guit then as the head is about to plunge leneath in this owne a new thotse leaps is given, and this by a succession of owney. The swimming is continued after this act of swemming on the beast has been acquired, an other made of swin ming on the Back is attempted the this as I have already said could be much more easily learned than the first -It is done by turning the body on the back

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so that all but the face may be un = 23 : der water, the besion portion of the body is the be relained hear the surface by The exertion of the back and then by the forcible stroke of the fut the movement is if-= feeted, - The same with which the body is supported in the supine position is manfeit from the action of the legs alone being suff, I cient for swimming, whilst the arms may be folded or remain at hert, wheras is suin ming on the breast is impracticable without the exercise of the hands. There is another made of the body in the supine Stuation called Flaating. In this the hoty hists horgontally at the surface, being suppor ted by a maderale mation of the hands, 12 at this support is brace at the chest a part

which The high "as they make no egoort against the mater M. uph for their support, 1 man in March 1 de to which were the same of the sam two Mut o The state of the s The state of the second state of the state o Kan مان المد مدالة الم

which from its builty has no need of it. 24 The inferior heavy portions of the hosy must he upheld by presuring a stiffness of the back hips and legs, that they may project by an inflancible line from the chest which remains find to the surface by its builty and the mo tion of the hands. - This particular manage ment of the back I have before spoken of as spential to Swemming on the breast, But tis the sale cause of Floating. I have he and that persons have been able to flast wellant using the hands, This a sulty if possible is cortainly very rane, and must depon a upon a structure not after to be met with, If a man has a small head, lange chest, slander museles and limbs and much fat, then pertaps by merely making that muscular acquaity ne

chary? THE MAN AND STATE OF THE PARTY a.dle The same of the sa 1/20. S The state of the same of the same in and down that they make the word cont the state of the said and and and 11 Whe he the street and the up that if and the the i rein is of the hand of the problem of all the in a notera And the many and the said the a it am a - ma the sall come of the sally 4 with and with severy of the land was the I besoft

Cepany to keep the hosy hosyoutally exten 25 and he mught be able to flast for a short times. I say for a short time only for tis impossible te continue long that muscular exertion by which the bady must be keept horgontate. There is no such thing in a healthy hody and the constant action of a muscle with out a relaxation of it, and the most valalizable pains arise from an endeaueur te presence a permanancy of Mus Oular contraction. - The only account of Houl my withaut some exertions of the hary, which Shave met with morthy of reliance is taken from the Philosophical transactions, and is as followed . -"The Lorar of the admiralty have appointed for the exercise of the scholans belonging to the royal academy at Portsmanth a small yacht Whenin during the summen months thase young sentemen are taught the practice

1 d by , set 1 sed to ristur ar for ie gun e sea ay so desle Had In

of working a weful at sea, under the 26 direction of one of the master attendants assis ted by eight or ten sea men. He but time this yacht was out one of the scholars was or dered to be and the lead, The youth was about Monsteen years of sign comale for his age, and far from being fat; as he was stepping on the gunnel he fell overbaand: The your to the soul The sea was rough and the yacht had great way so that he was presently at a very con sederalile distance from the upil. The skiff lows immedially lit aown, but the painter not being fast, the rope run an end and The baut went adrift, one of the seamon jumps overbiaand, got into the hoat, braught her along side of the wefil, took in another man and then went often the youth

hi the M hi care he should hunted, h to lone Sil burle he like Milis this ca III fees

they recovered often they had been in the 27 heaten more than talf an hour. The young guelleman relating the offin Said, that as he caula swim very little and graging he should shik if he showe a quent the meaned, he turned on his back and commit ted lemself to their mensey. He kept him = Self perfectly calm, and abserved when a wave wen likely to break our n him, to hold his breath and to speart aut the water forced bute his mouth." This care took place in sea water in which the hoganey of the hody is greater than in fresh as a cubic foot of Satt water weight 73 pounds whereas a cubic fatt of berk weight but 70. Jose of have never heard from any authority worthy of oredit, of mans flowting in fruit water, and wethant the peculian

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structure before mentioned of do not think 28 at popule. There is an aperation of surinming calld Treading water in which the body is kapt upright with the head and shoulders, above the surface. This effected by the alternate elevation and violent stroke of the fat agreent the water. It is one of the most tiresome met mades ef swimming and can be continued but for a short times, owing to the great museular exection necessary for it. For in this care there is a strong trudency of the body to de seemd from so much of it being out of the water, and the nesistance to this diseast is only made on the small surface of the solu of the fut . . There are dome other movement, in the water exhibited as feat, of display by districus queommens - But there need no particulass

tie Lave swin. the fi we have the same of the same to the water and t the is w the

natice as they are depend on the prin 29 cepter which have been laid down. --I have thus considered the moviety phenomena of swimming under the true heads of the lisery ancy of the hosy and Muscular exertion, lin: der the first & painted aut the relation of the granity of the whole hody and its parts to the ma ter, and the parition which this coundit to assume. Under the last I have shown how the horizontal parture is mantained by murcular exertion and home the body is propelled by it. Sohale now take natice of some other particulary of the art of Swimming, which the they are to be explained by The privious princeples, yet could Ant besthant a confusing orignession he brought under the precueding heads. -It had always hern a question, why man cannot swim naturally, when it is done by

1 wer it I murrounder Hair Marinement en dem the the has as of the heary 4 that and the last and their contract has been been been him the their specialist and the new many of the tine, is af the whole half and the party to the his me the of and ha bartines with all the countries to a down the with and a property of the second of the makt ather partienter of the whin Security with the the they are Varina by The process process for and it at action to the second of a second of the seco

nearly every brute however young the first 30 lime it gover into the weater. - This is common by oxplained by saying that in man fear free: = vents that use of his limby which would sup = port him if he placed a confidences in his exertions, wheras bruly swim he cause they me aistitute of fear. This view however will not ac caunt for it, since a little attention will meform us that mast brutes are not without this apprehension, and some mit with violines any attempt to put them in the water. Instead of an explination then it is only an instance of that indolent philosophy and acceptine byil which the bulger should employ in their inquiry often caused, which fines on any ma nifert attendant cereumstance, as the real effectivit cause of an effect. But the grus tion is of the easiest solution by attending

& Re THE RESERVE AND THE PARTY OF TH CARRELL STATE OF THE PARTY OF T ting so maile & as ate of days the since houses much made in mo the set of the set of the set of the set of is that mark doubt are not had the 马唇 man read the second was a second as a seco this is 1 priat uption

only to the different obnucture, of them and 31 Man is formed to walk erect on a firm resulting surface with the centre of his growity surpunaicular to the have on which he moved, If at any time that perfoundicularity should be last so as to indicate his falling forward There is mostantly an indeavour made to pre-: cut it by Anawing the fact forward that the line of the gravity may fall within them. and this relevation and the consequent motions is apaciatide by long habit with the bast perception of a tendency to fall. how when a man gaes into the wester who cannot divin he finas himself sinking or falling. The andy precaution he has been in the habit of using against falling is to bring his feet under the centre of gravity at the same time to throw aut his hands to sauce the concupion. of

yto, 10 th i of gr force action to the hear we will the think tino, a the same the first production and the street was be to an in the second of the second 2 mo me or the for me decement must be the force this wo the state of the publication of the second state of a, pu The state of the s woor we ke in the 4 Say

the body. This mode he at once has he 32 course to, but it is a vain endeavesier for softy, as throwing the feet forward under the centre of gravity brings him to the upright positione, and this as we have before seen is the least advantageous for support, in the wa ter. The makes violent exertions with his feet ance this with the upright position he has now afouried, puts him accastly in that state diseri bed under the head of Freading water and this we know earnat be contitued even by The mast expect swemmen for any length of times. The consequence is that he is unable as in theading water to make any progressive movement, and becomming soon exhausted by his exertions, he sinks weath the surface and is suffacated in Such heing the parition a man assumed when he goes but the weather and as their pasition results from his structure

a lake an and anion the same and a second SI - come wet the hinte at an encine on Paranette from a ton f and the section of the production of the section of as you of war pointed and have be will be a son as wind 9 Contract to the section of the secti to a hali A STATE OF THE PERSON OF THE STATE OF THE ST 1) Is besser 1 tre, in The the state of t h ling o the season of the season of the a. More was the constitution of the constitution of the as money wo ling A

and Labits, we may further see how there 33 Same eauces prevent his practicing the proper motions for sweemming the first time he has accasions for them. - For summing bequires exercises of the body opposite in every respect la the habitual exertions of it. Mans usual mation is made he are upright parture, in Swimming it is horizontal. In walking or summing on the earth, the light are moved attunably, in the water they are moved together constituting a leap. In walking the hands are pundent and intrate with no exection, across the holy on swim ming they are moved with great labour me a manmen apposite te their formen di rection, In walking the head is supported by the filler of home of the back and mick and not by Muscular former, In swine

y the Charles and seems the seems of a largle me conserved thousands his properman it was the first plant of the factor of A is fort the wind of the form with the farmer of Assistant former of the former he had be enditioned at the E the ut of and uneal matire is the as he am in hory gold 8. in a the descenting the horizonthe delate While on puration out that each the test g = wat the something attended the mante the o range more superties constating a habe of a nee o of the land and propert to and within the is to me

ming the head being thrown back to 34 an angle with the brogg and the body to by home, the whole wight of the is supported by the action of the museles But the great distinction and that on which The art of sucinnming chiefly depended is eicertain ooutraction of the musch of the back, to relain the hips at the surface of the water, which is not neepany for the ordinary motions on the earth. - how this difference between the management of the body in the water and whom the earth, is not Known by man, and even supposing the Knowleage of it were communicated by in struction, it might mand facilitate the acquirement of the art of swimming the without some experimental trals

to the season of the season have been to the le a air for an all the the said the said And the State of t as for the the analysis of the mangelies , tant the parties of the self-one in the self-one the self-one the self-one and the same of th faire contraction of the much of the to wim for the statement of the statement es tions, the simple of the state of the I litera ty, wi had all the second persons from a second of the field 1 ruch the seed of and and the se the Si - gree

of those different motions her would 35 not be able to support himself on the wester -But Brute, me know swim withaut this instruction and experience and as we have sun-that man is unable to swim from his structure and ordinary exections, a little consideration of the shueture and ordinary exertions of brutes, will unform us why they swim with So much case. - Bruty have nearly the Same specific gravity as man. consequently about the same relative portion of the bodg will remain above the water. But it is necessary for life that the same part in each the head, should be about the durface. The head is the heaviest part of mun

in the the said the said of the said li lighte with the same the same the same the same the por the without the the same of the same of 81 -14 an and the second s The same of the sa Without the state of the state hi acy of and the second of the second o 2 hilaid the chira and ordina distinct the many the the state of the s The same of the sa h and

Wheras the head of butter is compara: 36 lively lighter. Since there is less brain in foro portion, the hones of the head are more Spangy and there is a greater existing weither the james and in the nostrily. Buty Then have an advantage oven mon in the hoyancy of the parts of the body, But they have besides after advantages, for the neck and head being longer they more easily thetch the latter to the surface of the water for respondion. He usual position of the nek and head hung horzoutal, the and not supported by the back hore as in man they are famished with a stringth of mus de to support it without fatigue, therefore That elevation of the head which is mans greatest meanienea, is not felt by bruter . - - The contre of gran

ofbr a chest the first was the second of the first to by rate de apens de late . main the party of the party . The hivea we will a description of the same of the same of the her A to the sa me have sing a their set of and the the has the sale 4 th, ot desart there they make the tuli ach the latter to the surpace of the local たな supported the work of the second of the 1 - But and de de de desing horzone l'all, she that e ton g

vity of bruty is about the brock part ? of the chest, so that when the own into the wa ten they naturally take a position with the legs a pendant and the head upright Acarly the same of their position on the couth. In the second point then or in position the brute has the advantage over man, for since this is the same in his body that he has been used to, it is only needs any to make a Hight extention of the head and neck to he in the true posture for progrepine swine ming - But man mutt make a puniful elevation of the head and a rejed con: haction of the hack and hips. as negards the third point on the murcular excition for the swimming of bruty the obvantage is more considerable, me have sun how ma my difficulties manchast to incounters.

1 the part the of the stand the the stands 1 the the ship is the attended the said and A what the strain wife there a possed some straining to alk 1 9. whilst le affin a se a se de forme de la partir de la serie de de suly her the arthur the course plant of a supplied of 4, purface a com any succession in the state of c y of the first specifical of the first see the first A. Il his have . that mean mintel marke a pourt a Home The same of the sa e that we

in this part of the function. But in 38 brutes the motions are all the same that he is habiterated to on earth, he has only to walk tho the water to move forward. Thus whilst men have so many thinge to bearn defenut from their usual habit; brutes have only to learn to shetch the head to the surface of the water, and this the me = cefsity of breathing teacher them the moment They fall inte it: I have said that a knowledge of the theory of swomming or the means by which is effected would fucilitate the acquirement of the art, but alone would not be suffecient with aut the emperience of triats in the water. This suggests to us the consideration of the made in which the art is asque hed and the means that one occasionally

last of The was a sold and a sold of the same of the a distribution of the state of the with the the wonder to many and Mach i el an The arr of ai fut, they of the attended the stay than to care & im, a In retra

employed to teach it. - 39. The art of Swimming like all other arts is hand in the tediand school of many failures, the each successive indeavaur brings it nearer the Berfect execution, when a hough forct goes into the water, he is well aware from seeing others, of the Manner of making the stoke with the hunds and feet, but this shoke however regular by made will support him or enable him to swim, whilst he remains ignorant of The methad of bringing his body to the ho: signital passtion. Any one who remembers his first attempts at swimming, or has seen other bays barn must have absured that they mnedially catch with their fut at the water here ath the body or centre of gravity

w him A in sha A mar 4 water aller to the same three to be and the bough he sh the ajus pa win so to st y whi The su met me the te wa hu

which brings them to the upright po = 40 sition, and as the art is always underthe Hen in shall an wester, the feet soon touch the grown d and the attempt is at an end. of the water he so sup that the fact when Thus tranglet under the hady cannot he ach the hottom, the upright position it apumes but it into the state of treading water, so that after the fine rapid and veolent strokes which this pasture nequires, it sinks -Thus we see hoys learning to swim make very molent exections and yet make no progress the water . - They are generally toto as instruc tion on there accasions to be more moderate in their motions, and that they will do better if they are not so rapid. Here is great want of observation in this remark, For ex: cost the hady he in a different position

fat - Note that the same has been a first In fact a The state of the second A valen Marion meer that the part washing 1 ne Her ment of an all the selection of the line the try on market the sea state of the sea of the sea 1 to the drawing for and the state of the state of w. the b and the second with the position of her on the wa many the first state of the sta OF I am the state of the place of the state of the s the lack of or the a of each one will proposed the proposed to y whing In let, as in the

from that buys always assume when 41. they first attempt to swim, no other than this violent exertion will support them, Before therefore they are tele to be lip impe = turns they should be directed to maine the hip to the horizontal line, for then alone when the brand front of the body is pressing on the water will a moderate action of the arms and ligo suffices. For with the back converse and the fut dependant or with an aproximation to the pasture of the abing weather, the motion must be violent, as the best swemmen exhibit, in The foreible impulses they are abliged to make on the water to support themselves for a short time in this upright position-After the hay has made many imour cappul allements to support him Self by this

A PARTY OF STREET, AND AND AND ADDRESS OF THE PARTY OF TH i to the luck, A THE RESERVE AND THE PARTY OF TH a to ma The state of the same of the same of the same of futer, to a nim o THE RESERVE AND THE PARTY OF TH a holice ma th the second case of the second second second HIMAN and the design of the second of the second yin le turay o the publication of the second contract of the second secon Vadden

prolent exercise of his limby, he finds 42 by accident or disign, that the more he elevates the hips to the surface by straighting the back, the more easy the support becomes and the more progress he is able to make tho The water, let at last he attains a complete dominion over that museular management which elevates the body to the honesoutal por time, and then and not title then he be comed a dwimmer. Bays in hanning sometimes make use of hyde substances as thadday, cortes and pecces of wood The bladders and corks one usually placed about the thetant and by their livily prevent The body from sinking even in the uproject position. Hat there are generally slow aides as they do not track the essential art of elevating the back. The use of a long.

y mai alent in air air of the line by the wind it and and the state of the section of du kent and the state of t with hy has the ha the sale and a second second section is ta forto The state of the s A line or Service of the servic med. to low we the h to tem to The state of the s he lay. Se ste

of wood is better. For the boy laying 43. his breast whom it whelst it extends his whole lingth, the lightness of the wood ele: vate, the hady, hips and ligs to the horizon tal portion, and teacher him to retain The Same situation when the mand is he = maned. The tracken of the art generally take boys into the newton, and support them with the hand under the bady, they then tall them to strike the Lands and fait. pegularly. The great sim of this Made Seemed to be to beach the art of uma King the regular shope. But the abban tage of the made really courints me the elevation of the back, so that often a hay has been held in that position for sometime by his marker, he apoceates

A lingues de sim , M Le meace Ci n lose A find a ay und an ey it give the woper as the ac to ling of he lay 1 L. Reg.

this horizantace parties with his attentities At swim, and when the Land is removed he in acaseasy to presence it by the mus oular eautraction of the back. Thus the hand under the bady and the piece of waod are not of service from the boyan ey they give, but be cause they direct to The proper and maispendible posture. I hor are there aids of much consequence in tracking the stroke, as the support of the hody does not much defend on its requ lavity. Regularity of stroke is aly obulily hecefsary to rapid progressive motion But it betreys want of abservation, tesay that a regular and sun chonaus action of the limby is a necessary mesace to the att et swimming, since me su in good

Summer Almost the Benefit with the purity and and and the go to ja sun, ca mut me the part = /m / of/ a like ! an Mgs po to of and Lat Frating

Swimmers who are masters of the 45 great epulial for the out, the flat pos sition, can support thomseller with the mast imegular motion of the limby. and those parties they go Amough for the dis: : play of feats of distinity, one made by a mide departure from that paralelles me and regularity of shoke which are sufposed so neessary for the acquirement of the art. in The arts of swining on the back and Haating are acquired also by learning to bring the hady horizontally to the sur pace. If me observe a boy attempting to swim on the buck or flaat, me See he is not marter of this art of me: sections the hody along the surface, for

The world the second to the second to the second A le par at a some description of the state of the 女上在 with the work the second the seco Sei Jun poter he providence they go ofference to the day . he went of peak of the local pain and the ta had de departuar pour lat mora lesser he short a green of other tes which are trans U. from A so ne ce sary for the acquisioned Lik daw by hat the art. in The Addition of the Addition o 20 dly 1 adding are acquired also les les merins falle-6

The he purher the fut above the the sur: 40 fre, the hips remain sunk and the hady ourved, and as in this oursed parties he has les extent te appare to Mis account in the wester, he can man tain that flauting parture but for a very short time. I From the principles which have been Laid dawn me may easily point aut by what neans swemming may be much tapidly made and langut borne wettant fatigue. - The first requirete for rapid Swim ming is Buoyancy, for when the body is easily supported, les muscellar exertion is required for that purpose and more can he given for its progressive novement. The requesole in Fruotuse is a brase palm

al se, file for of heart is these the or di nes o gu to the The same of the sa af Cher til of a Per mary The moin 5.1

and sole, and great muscular power 47. for the for the forcible excreise of there. The me and in position is that in which then is hast resistance which is when the badgis thown on one side in its pragress, for the difference of resistance will be then just a: qual to the deference of breath and depthe of the Chest - and I am told that the In dians of our country who are expent swimmer, we the side nother habitually. The power of swemming a long time, as penas upon the same princeples as the long Continuane of any other Muscular exertion the strength of muscles and the habit of wing them. Some men from hatel are able te porform great exertions in this

D! Jaklin e she Ship in se he bias 如此好 Au what in we w leti port 'en for a 20 your on Llog ante la as we want

Dr. Franklin when a youth arew con 46 se æerable notice in London fom an ex plact in swemming from Chelsea to Mack prian briage, a distance acomile and se attende of about three mily, and Baron Aunicolat pelaty that there are men in force who perform the duty of the letter part by swemming down their severe for a journey of two aays, sesting accasionally in their overse. They use a small log as an aid in their Support, and carry the lettery bound in a turban about. their header. - Cape King auring his stay at the Sandwich islands saw a child of only four years of age, that had been accedentally over set in the see, swim about with the greatest discling litt it regains

Too to me franklin water a present about 4 8 in why alee moties in tongon from on Leu Mane the summing from Chiles in the 22 y m2 the tegen at the the actions with the in hotan become of about March miles and Marin in posi wastat selaly that thuse one mere ance who purposes the authorities of the icut ma in part by overnousing desire their i nut is for a forest one there again the sings by stopie en and the survey of the same of - or let for a by as an and in the one res by the they have no the form of the standing he has of

From the motions recassary in swimmings 9. he see why that exercise is so time some. The wer al shavement of man an the sait is walking ma in this we see one of the abun: a ant instances of the wise sconomy of nu: ture in providing for the mart necessary and prequent mants of animals. For so small is the exection of walking that it is much les fatiguing than standing equally on hath feet for the same lingth of thee. In wealking the weight of the boay is horse by the pillar of home of the linely and very tille by museular exection. The only action of the muscles being the tilling the centre of gracity alternality on the aboanced light. But the action of the links in the water is a Succession of hapos, in which the whole

w to the - And the state of the second me l'ulere as sorty or all some while it is not placed to the the tolars fit mig the second section with the last the la ten to rime ich of hon and making the state of the state of to like me ではないない からからからない からいからない からいからないとう in a great which is a second of the secon n at Est The the war part of the standard of in protie a mat

weight of the hady is forafselled by the 50 murchy. Whereas such is the contrivance of The art of walking that not a fourth part of that weight is moved or supported by them, the remainain hing wipheld by the pillar of hone. - The exertion of the hards too which are employed in removing the win ten at a great distance from the centre of motion at the shawlding, the excition of Ruping the hosy horzontal and the labour in supporting the head, me all attended with great fatigue. De Tranklin hus concluded his bille prace the al essay on swimming by saying it is an act which when once acquired is hearn forgotten, This is withered with a kind of attonistic paint. That would seem to himit

NO THE WILLIAM STATES OF THE PARTY OF THE PA 24 Jun 4 m Ma Le wood the order, Ou 2 4,600 per such as of the contract of the second W 44 02 6 Le way los telle i morner muly ing on

its truth with some triumph to this 50 preculiars act. But there are many other arts that are never forgotten the hamd with greater difficulty and in much longer times. The pawer of memory in any art depends on the number, complexity and napedity of motion necessary for its execution. If the mations be numerous or complex, the power of the memony over many parts of the process will be lost from the mught of the burden, I the art nequine na pid movements, the shility for them must be preserved by continual exercises - The art of playing on musical instruments, and some of the manufactuaining arts which have been aptly termed the arts of handling one after for gotten in the particulary of their disatrans actail, since the wast number and manual

Me to the The selection of the second se the state of the state of the state of the state of ac leding - 1 he h 2 1 Lines and the search when the season was e at as and the second s 2 10- 11-2 ware on compliant, the passer of the the state of and e pter. 1 ca : free he and white and the after the after the last the first thea moreconet to the childy for them must an 1 mit Both. A

Slught of motion they require in two 51 great for the memory, 10 at the more general. and hading practice of there arts when once hand are retained for over . - If swimming be quire a such vitireale and almost infinite movements as musical performance, the skilful execution would like this after on witernesprose be forgatten. But if the theory of swemming. quen to have be correct, the memory is only re quired to bear this simple precept, that the back must be elevated to the surface of the water. This may and surely will be se toined for the longest life. and as the mo tions for effecting this horgantal position one not necessarily rapid there is no need of constant practice to mesure distinity. The not of Swemming then is not forgetten only

4 pt The floor peter " The many the many was a second to the same of the same to me to The west of the state of the st the wines wind le - lity of property of the property of the property of the property a my of e to raid on try y The state of the s a tip

be cause there is telle to be remembred. 5-2 I have never heard that the art of Skating is forgatten and yet the unaccustomed mo tions and management of the hady for this exercises are more numeraus than for swimming. as in it there is a necessity for a regedity of musely to preserve the position but there is besides a necessity to petain the me Callechon of the variations of the centre of gra vity, the mast delicate perhaps of our badily perception, yet when this art is once a equi red the knowleage of it is mallibly brand ea on the memory. -I have their gentlemen mae anound to exhibit to you some bading hiews of the Shong and art provetices of swimming. If I cannot call it an important subject for your consideration. o

Ramans.. le int. ta thete 2 ne tha "neeit nee litteras me natare." on with a or my ch المعترفيات المتعارض عاملات عام الانتقالات a ilhan as right

at hast believe it to be the mait popular 53 and practical be relicated from the whole com: pap of Phisiology, since every man has some morett in it. . The ancients, whose political institutions inculeated and required the proce tice of athletic arts used to say in contemp: trans represent of the afective aducations of any one that "he know neather his letters nor have to Swim. The campus martins set Rome was chasen on the borders of the Tylun that the school and sports of the pela and water might be united and relief aforded to the aust and sonor of their daily drill. Our times do not command the necessity of an e an eation in this art, and tho it may be ques: tioned wether the name accasions which occur of meserving life by it, should make it an man pousible part of instruction, more than

many after the state of the s the desire the second winds and the second to ne at we 2 a tol In that at in the some was produced and a second refry or and the beauty of the Deliver of the Contract H a frie to de lette de te de de say in localitains the west represent al the after a day a district the theets me that the drew he had been and in the and to derive the early and and teilmal are a large on the moral or the character talem the service much property that had a service and ent pity u printe se united and milial promises

many other arts of equal utility which 54 are not universally taught. yet it becomes an abject of interest and curiasity to ally the attimpts that one universally made other through unefulness or pleasure to acquine time His a triumph of madern seionee which. the ancients neither affected or gained, that the intillectual-efforts of phelosophers have been turned to those practical eshours that limber the moral the political and phisical the: : tion of man. The intillectual industry of antiquity was warted in the variety of its pur suit; and the asmeren of its literature, its. alestract seiences and elegent arts, ment aplace the loss the world has sustained from the fruttitrues of much of its philosophical labour. The book with wonder on a people

of could a have and a few at medical contraction of have seed able that I have the seemed ein ma The thing has been a fine to be the first of etr fint as to that said animer sails thanks a thing am the we and on pleasure to accument in = a longing a Theisemph at the section a designate with the fromate in except neither affection on gains of that na & how The ghat o at le chicas - edinte of philapolitani te and see Apple tion, to 20 carly home and the president and phise case the na shill of main. The intellester singuistry of ? Et phinia. with seem wanted for the manipul the iew flim

who could confuse its religion with myste 55 seism, and deform its secence by the enquiry often first and unsearchable causes, and at the same time with flagnant inconsistency here to a confision of the want of chritianaly, and aproximate to the subline inventions of Liebnity and of Newton. This reglect of the highest aim of seience its practical application, was not the result of it, necessary progress tho the early steps of inhecilles, since anchemider e: · quality skilled in theoretie and practical knowledge has lift his apinion that the practical and mechanical bine of science were beneath the mind, and that the retie and abstract pursuit, were the goolise employment. of man. and whilit he has given to parterity whole books an the properties of away he has made no mention of Thank wonderful arts by which he presend his country from all the attacks of a skilful and powerful energy. He paid a fatal tribute to his abstract partially a type to the world of the fatality that must

await the scientific pursuats of man in a universal reliance on this belief in in James Rush Philadelphia October 1815 412 940V. 5 430



